WASHINGTON

CABINET AFFAIRS STAFFING MEMORANDUM

Date: 10/29/84 **Number:** 169088CA **Due By:** _____

Subject: Cabinet Council on Economic Affairs Planning Meeting - October 30, 1984

8:45 A.M. - Roosevelt Room TOPIC: Financial Market Developments

	Action	FYI
ALL CABINET MEMBERS	☐	☐
Vice President	☑	☐
State	☑	☐
Treasury	☑	☐
Defense	☑	☐
Attorney General	☐	☑
Interior	☐	☑
Agriculture	☑	☐
Commerce	☑	☐
Labor	☑	☐
HHS	☐	☑
HUD	☑	☐
Transportation	☑	☐
Energy	☐	☑
Education	☐	☑
Counsellor	☑	☐
OMB	☑	☐
CIA	☐	☑
UN	☐	☑
USTR	☑	☐
GSA	☐	☐
EPA	☐	☐
NASA	☐	☐
OPM	☐	☐
VA	☐	☐
SBA	☐	☐

	Action	FYI
CEA	☑	☐
CEQ	☐	☐
OSTP	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
Baker	☑	☐
Deaver	☐	☑
Darman *(For WH Staffing)*	☑	☐
Mc Farlane	☐	☑
Svahn	☑	☐
_____	☐	☑
Chapman	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
_____	☐	☐
Executive Secretary for:		
CCCT	☐	☐
CCEA	☑	☐
CCFA	☐	☐
CCHR	☐	☐
CCLP	☐	☐
CCMA	☐	☐
CCNRE	☐	☐

REMARKS:

The Cabinet Council on Economic Affairs will meet on Tuesday, October 29, 1984, at 8:45 A.M. in the Roosevelt Room.

Attached is a third background paper - the agenda and first two background papers were distributed on Friday, October 26.

STAT

RETURN TO:

☐ Craig L. Fuller
Assistant to the President
for Cabinet Affairs
456-2823 (White House)

☐ Don Clarey
☑ Tom Gibson
☐ Larry Herbolsheimer

Associate Director
Office of Cabinet Affairs

STAT

THE WHITE HOUSE

WASHINGTON

October 29, 1984

MEMORANDUM FOR THE CABINET COUNCIL ON ECONOMIC AFFAIRS

FROM: ROGER B. PORTER RBP

SUBJECT: Paper for the October 30 Meeting

The third paper for the Cabinet Council on Economic Affairs meeting tomorrow is attached. It was prepared by William Poole and concerns "The Real Rate of Interest." It considers what has happened to the real rate of interest in recent years and the determinants of the high real rate of interest that we have experienced since 1981.

The other two papers for the meeting were distributed to Council members last Friday.

Attachment

COUNCIL OF ECONOMIC ADVISERS
WASHINGTON D C 20500

CM# 111

WILLIAM A NISKANEN
WILLIAM POOLE

October 26, 1984

MEMORANDUM FOR THE CABINET COUNCIL ON ECONOMIC POLICY

FROM: William Poole W.P.

SUBJECT: The Real Rate of Interest

The real rate of interest has been unusually high over the past four years. The purpose of this memorandum is to examine what has happened and to discuss why it happened.

Definition and Measurement

The real rate of interest on a loan is defined as the nominal (or market) rate of interest less the rate of inflation. Two different real rate concepts are important, depending on the problem at hand.

- The ex ante real rate of interest is the nominal rate of interest less the expected rate of inflation over the relevant horizon. For example, the 52-week Treasury bill closed at 10.0 percent on October 17. If the expected rate of inflation is 4.0 percent over the next 52 weeks, then the ex ante real rate of interest on 52-week bills is 6.0 percent. The ex ante yield is relevant for investment and saving decisions.

- The ex post real rate of interest is the market rate of interest less the actual rate of inflation over the relevant horizon. For example, if the realized rate of inflation over the next year were 3 percent, then given the 10.0 percent market yield on October 17 the ex post real rate of interest would be 7 percent. The ex post yield is relevant for measuring investment outcomes.

Measurement of the ex post real yield over any past period is simply a matter of collecting the market interest rate and inflation data. Measurement error can arise only through errors in the price indexes. For present purposes these errors are unlikely to be very important except, possibly, during the 1971-73 period of price controls when controls-avoidance strategies were pursued by many firms.

Accurate measurement of the ex ante real yield, however, is difficult because investors' inflation expectations are not directly observable. If price-level indexed bonds were available, as in the United Kingdom, direct observation of ex ante real yields would be possible. But, in the absence of indexed securities we must rely on survey evidence on in[illegible]

Because the ex ante real rate of interest affects decisions, for most purposes the ex ante real rate rather than the ex post real rate is the critical concept. Despite this fact, many analysts emphasize the ex post real rate simply because that concept can be measured accurately--the drunk and lamp-post phenomenon.

The Real Rate: Recent History

For many years the American Statistical Association and the National Bureau of Economic Research have jointly conducted a quarterly survey of inflationary expectations. Column (2) in Table 1 reports the average one-year inflation expectations from these quarterly surveys each year starting with 1970. Column (1) reports the 52-week Treasury bill rate, averaged over the quarterly survey dates each year. Column (3) is the difference of the first two columns--the calculated ex ante real yield. Column (4) reports the actual rate of inflation, and column (5) the ex post real yield. The difference between columns (4) and (2) is the inflation forecasting error, reported in column (6). The ex ante and ex post real rates reported in Table 1 are also shown in Chart 1.

A survey of 10-year inflation expectations, conducted by Becker-Paribus, was begun in 1978. Table 2 reports data from that survey, the 10-year Treasury bond yield, and the calculated ex ante real yield on 10-year bonds. However, the ex post real yield and inflation forecasting errors are as yet unknown, and so Table 2 has fewer columns than Table 1.

Both ex ante and ex post, the real yield on 52-week bills has been much higher over the past few years than earlier, as can be seen from the bottom rows of Table 1 where averages for 1970-74, 1975-79, and 1980-84 are reported. From Table 2, the real rate of interest on 10-year bonds has also been much higher in the early 1980s than in the late 1970s. Real rates have now been high enough long enough that a fundamental explanation must be sought. What has happened cannot be the result of short-run random variability.

Linkages Between Real Returns on Securities and Physical Capital

Real returns on securities and productive capital are linked through several mechanisms. Putting aside the issue of how corporate dividend payouts are determined, a firm can use retained earnings to buy new equipment, to accumulate financial investments, to retire its own debt, or to buy other companies. If the firm has accumulated liquid assets, the same options are available. Its choice will depend on which use of its funds promises the highest after-tax real rate of return, after adjusting for risk.

A similar linkage mechanism operates when a firm decides to borrow to finance new purchases of plant and equipment. So long as the expected after-tax return on new investment exceeds the cost of capital firms will be willing and able to pay high interest rates on their borrowed funds.

These two mechanisms link the real rates of return on bonds and new investment in plant and equipment. It is through this linkage that increases in market interest rates can depress business investment. But the linkage works in both directions: if something happens to raise the expected after-tax real rate of return on new investment on an economy-wide basis, then the real rate of interest in the financial markets will be pushed up. In order to understand why a price has increased--in this case, the real rate of interest-- and to understand the significance of the increase, it is essential to determine whether demand has increased or supply has decreased.

In my opinion, the high real rate of interest in the financial markets over the past few years is primarily the result of a high real after-tax return on new investment. Investment fundamentals have improved markedly; thus; the direction of causation has run primarily from an increased after-tax real rate of return on new business investment to an increased real rate of interest on securities. To develop this important point, it is necessary to outline the major determinants of the rate of return on new business investment.

Determinants of the Rate of Return on Investment

The determinants of the rate of return is a large and complex topic. Major issues concern:

- The amount of excess capacity
- Technology, productivity, etc.
- Labor--skills of the labor force, frequency of strikes, work rules, wages, etc.
- Regulatory requirements, including those relating to prices and to health, safety, and pollution control.
- Taxes--Private firms respond to the after-tax real rate of return.
- Inflation--Inflation interacts with the tax system to change the effective tax rate. Also, high inflation

is almost always variable inflation, which increases risk.

- o The capital/labor ratio--Other things equal, the higher is the capital/labor ratio the lower is the return from adding even more capital.

Following the late 1970s most of these determinants of the after-tax real rate of return on investment moved in a positive direction. Excess capacity was a problem during the 1981-82 recession, but is no longer a general problem. Productivity is rising. The labor environment has improved; there are fewer strikes, restrictive work rules are breaking down, and wage increases are modest. Escalation of regulatory requirements has ended, and so the regulatory environment is more stable and predictable. (However, most of the inefficient regulatory restraints of the 1970s are still in place.)

With ERTA, there has been a major reduction in the taxation of earnings from new business investment. Lower inflation has reinforced the effect of the accelerated cost recovery system (ACRS) in increasing the after-tax real rate of return on new investment.

The basic proposition, then, is that the higher rate of return on new investment since 1981 has spilled over to the financial markets. That this interpretation is the correct one is shown most clearly by the fact that the United States is now experiencing a tremendous investment boom. The share of real business fixed investment in real GNP is the highest in the post-war period, as can be seen from Chart 2. Analysis of the 1981 tax changes indicates that the largest incentives were for investment in equipment; the investment boom is in fact concentrated in the equipment area, with structures investment behaving fairly normally. Finally, the high rate of return in the United States has attracted foreign capital and has strengthened the dollar.

In short, investment conditions have changed favorably across many dimensions. The net result is that the demand curve for new investment has shifted out and to the right generating higher investment and a higher real rate of interest in the bond and money markets.

The final determinant of the rate of return to be discussed is the capital/labor ratio. Other than through major war-time destruction, this ratio changes only slowly because the capital stock is very large compared to the flow of new investment and to fluctuations in employment. At the end of 1983 the U. S. business fixed capital stock was in the order of $5,500 billion while the annual flow of gross business fixed investment was in the order of $350 billion. Moreover, part of the annual gross investment is required to replace capital that is wearing out and to provide capital for the growing labor force. Although a high rate of investment has little short-run effect on the size of the capital stock, over time a higher annual flow of new investment can accumulate into a significant fraction of the initial capital stock. (For an analogy, consider the difference in an investor's wealth from reinvesting a return of 11 percent versus reinvesting a return of 10 percent. The difference is trivial to begin with, but mounts as the years roll by.)

The policy significance of this observation is that a degree of patience is required to see the full effects of actions raising business investment. Increasing the annual flow of new investment will not, in and of itself, have any important short-run impact on the size of the capital stock or on the rate of return on capital, but over time the effects of a larger annual flow of new investment will become increasingly evident. Capital accumulation is a policy goal because a larger capital stock will produce more national output and raise real wages--the rate of return to labor. At the same time a larger capital stock will reduce the rate of return on new investment, other things equal, and thereby reduce the real rate of interest on bonds.

The real rate of interest on bonds could also be reduced by reducing the rate of return to investment by raising business taxes. But that method of reducing the real rate of interest in the bond market will slow the accumulation of capital, slow the rise in national income, and slow the growth of real wages.

Government Budget Deficits.

The budget deficit fits into this analysis through its effects on national saving. A higher budget deficit, taken alone, shifts the supply curve of loanable funds available to the private sector back and to the left. In this context, the principal short-run effect of the deficit is to reduce national saving rather than to increase the real rate of interest. But over time the lower national saving, and therefore lower national investment, keeps the capital stock from growing as rapidly as it otherwise would, retarding the growth of national output and real wages.

The preceeding paragraph glosses over an essential point, which will now be addressed. The above analysis was in terms of, "a higher budget deficit, taken alone...". But changes in fiscal policy considered as options to reduce the deficit cannot be analyzed satisfactorily by looking at the deficit alone. Tax and spending changes have extremely important incentive effects. An analysis of fiscal policy options that focuses only on deficits and ignores incentives issues is incomplete. In the context of this memorandum, the issue concerns incentives to business investment--fiscal policy effects on the after-tax real rate of return on new investment.

The importance of business investment incentives can be outlined by briefly considering all major deficit reduction options. Reducing the deficit by reducing government purchases of goods and services would release resources for private use. Some of those resources will be consumed and some saved. The part saved would add to the economy's rate of investment. The capital stock would grow more rapidly, gradually reducing the rate of return on capital and the real rate of interest in the financial markets.

Reducing the deficit by reducing government transfers would also be expected to raise national saving by depressing the consumption of those whose transfers are cut. However, depending on the transfer program involved, in some cases consumption might be maintained. Then, private saving would fall as government saving rose.

The effect on national saving of reducing the budget deficit by raising taxes would be highly dependent on the form of tax increases. Consumption taxes would be expected to reduce consumption. Higher personal income tax revenues would also be expected to reduce consumption, but the exact effects would depend importantly on the mix of tax rate and tax base changes that produced the revenue increases. Put another way, revenue-neutral tax reform could probably raise personal saving, yielding faster capital accumulation and, in time, lower real rates of interest.

The effect on national saving of a change in business taxes would be especially dependent on the form of the tax change. Some types of business tax increases may reduce business saving as much as, or more than, government saving rises. This result seems especially likely if higher business taxes were to reduce the after-tax real rate of return to new investment. If that were to happen, the real rate of interest in the financial markets would fall, but so also would national saving and investment.

Table 1
Average Real Interest Rates -- Ex Ante and Ex Post
(Percent)

Year	(1) One-Year T-Bills	(2) Expected Inflation	(3) Real Ex Ante	(4) Actual Inflation	(5) Real Ex Post	(6) Inflation Forecast Error (4-2)
1970	6.17	3.43	2.74	4.97	1.20	1.55
1971	4.52	3.37	1.15	4.15	0.37	0.78
1972	4.68	3.56	1.12	5.75	-1.08	2.19
1973	6.97	4.29	2.69	8.83	-1.86	4.54
1974	7.51	7.00	0.62	9.28	-1.78	2.29
1975	6.20	6.21	-0.01	5.24	0.96	-0.97
1976	5.61	5.90	-0.29	5.81	-0.20	-0.09
1977	5.77	5.85	-0.08	7.36	-1.59	1.52
1978	7.78	6.68	1.10	8.69	-0.92	2.01
1979	9.76	7.87	1.89	9.19	0.57	1.32
1980	10.79	9.00	1.79	9.63	1.16	0.63
1981	13.35	8.25	5.09	6.05	7.29	-2.20
1982	10.80	6.22	4.58	3.82	6.98	-2.40
1983	9.77	5.03	4.74			
1984	10.37	4.86	5.51			

Five Year Averages

	Ex Ante	Ex Post
1970-74	1.66	-0.63
1975-79	0.52	-0.24
1980-84	4.34	5.14

Table 2
10-Year Real Interest Rates (ex ante)
(Percent)

Date	(1) 10-Year T-Bonds	(2) Expected Inflation	(3) Real 10-Year Rate
Sept. 1978	8.42	6.20	2.22
May 1979	9.25	6.75	2.50
June 1980	9.78	8.61	1.17
Oct. 1980	11.75	8.82	2.93
Jan. 1981	12.57	8.28	4.29
May 1981	14.10	7.87	6.23
Sept. 1981	15.32	7.62	7.70
Nov. 1981	13.39	7.73	5.66
Feb. 1982	14.43	7.16	7.27
April 1982	13.87	6.76	7.11
July 1982	13.95	6.80	7.15
Sept. 1982	12.34	6.73	5.61
Dec. 1982	10.54	6.60	3.94
March 1983	10.51	6.32	4.19
June 1983	10.85	6.58	4.27
Sept. 1983	11.65	6.63	5.02
Oct. 1983	11.54	6.65	4.89
Jan. 1984	11.67	6.41	5.26
Mar. 1984	12.32	6.35	5.97
June 1984	13.56	6.66	6.90
Aug. 1984	13.36	6.07	7.29

	Averages Real Rates
1978-79	2.36
1980-84	5.41

Chart 1

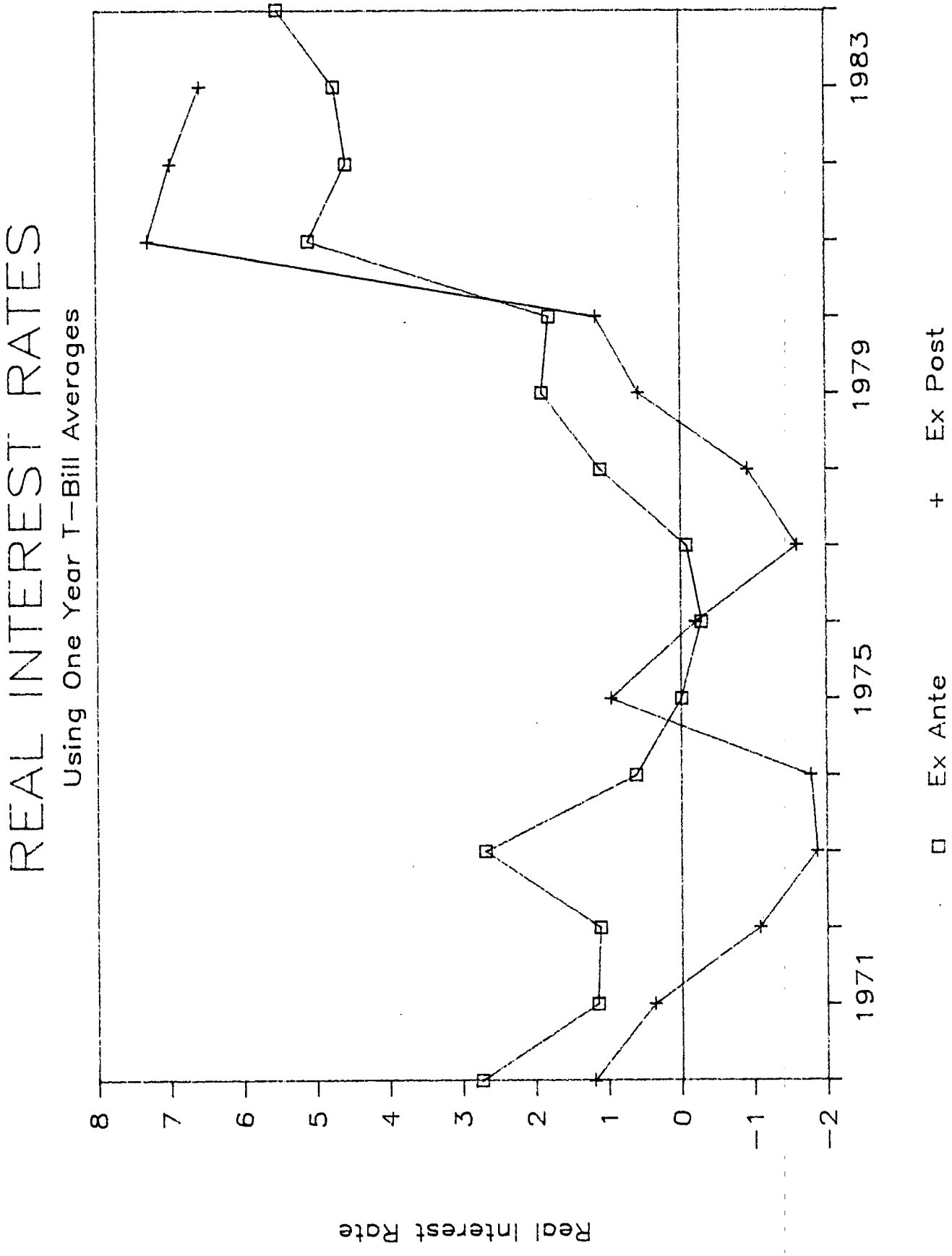

Chart 2

REAL BUSINESS FIXED INVESTMENT :

PERCENT OF REAL GNP